FY13 CALL FOR RESEARCH PROPOSALS (BOTH NEW AND RENEWAL PROPOSALS)

Deadline for receipt: Friday, April 6, 2012

1. INTRODUCTION

The Institute of Geophysics and Planetary Physics (IGPP) at Los Alamos National Laboratory (LANL) is one of the Los Alamos National Laboratory science institutes; it has also served as a member of the University of California's Systemwide Institute of Geophysics and Planetary Physics. Its science mission is to promote and coordinate basic research on the understanding of the origin, structure and evolution of the Earth, the Solar System, and the Universe, and to develop the science base to predict future changes as they affect human life. As part of the mission, IGPP at Los Alamos National Laboratory is committed to promoting and supporting high quality, cutting edge science in the areas of astrophysics and cosmology; space physics; solid earth geoscience; and an integrated understanding of the Earth's climate system. These subject areas are selected based on their breadth of scientific challenges facing the international scientific community as well as on the strategic need to extend scientific excellence supporting the Los Alamos National Laboratory mission.

In order to encourage highly creative and innovative ideas and concepts, IGPP emphasizes revolutionary and moderate to high risk research, in contrast to low to moderate risk evolutionary research. Projects supported by IGPP normally include students and/or postdocs, with project durations up to three years.

Collaboration between Los Alamos National Laboratory scientists, university scientists, (LANL or University) postdocs, and (LANL/University) graduate students is viewed by both IGPP and the Laboratory as an effective arrangement to promote creativity, extend science beyond today's understanding, and build a long term opportunity for program growth for both the Laboratory and its collaborating partners.

NEAR TERM GOALS

IGPP seeks proposals that enhance our understanding of the origin, structure, and evolution of the earth, the solar system, and the universe, and on the prediction of future changes as they affect human life. We address the problem within four specific disciplines:

- Geophysics
- Global climate
- Solar system
- Cosmology

IGPP Science Portfolio

1. Astrophysics, space physics, and cosmology, with the goal to advance theoretical, modeling, simulation, and technical sciences on subjects that map to capabilities needed in divisions involved in weapon simulation (e.g., Magneto HydroDynamics (MHD), uncertainty quantification) and national security (e.g., nuclear detection, transients, sensing, imaging, space weather);
2. Solid earth geoscience, with the goal to advance theoretical, modeling, simulation, sensing and technical sciences that advance capabilities needed in understanding natural hazards (e.g., earthquakes, volcanoes), carbon sequestration, repository science, natural resources glacial-land isostatic adjustments and nuclear monitoring.
3. Climate and energy science, with the goal to advance and integrate theoretical, modeling, simulation, sensing and observational sciences that push the frontiers of predictability of weather/climate variability, its response to anthropogenic forcings and enable the resilience of interdependent infrastructure, both in todav's and in future climate states.

Los Alamos National Laboratory provides funds for IGPP collaborative research involving Laboratory staff members, postdocs, university PI's and their students and postdocs. In most part, funding is reserved mainly for graduate students and/or postdocs, including travel between the home university and LANL. Student and/or postdoc participation are an essential component of all approved projects. A small amount of funding is also provided to proposals to conduct a technical feasibility analysis of a revolutionary concept, and funding for this class of projects can be awarded to a Los Alamos National Laboratory staff member. While many collaborative projects extend up to three years duration, funding in each successive year is contingent upon adequate progress in the previous year.

University/Los Alamos National Laboratory collaborative research.
Each proposal is required to have a University Principal (PI) Investigator and a Laboratory PI. A University Principal Investigator may be any University scientist entitled by the University to be a Principal Investigator on an extra-mural grant or contract. A Los Alamos National Laboratory Principal Investigator is any Technical Staff Member. Visiting scientists, adjunct faculty and postdocs do not qualify as Principal Investigators unless the University grants an exception. Generally, successful proposals are **required** to include some form of matching support from their universities or other institutions. Acceptable forms of matching support are the same as, but not restricted to, those accepted by the National Science Foundation or other Federal research funding agencies. Proposals may be submitted from any US university. Typical project budgets are $25K-$75K, per annum, and approximately 10-12 new projects (that can extend up to a three year duration) are likely to be issued in FY13. Universities should note that, unlike many federal science-funding agencies, the funding mechanism for IGPP collaborative projects involving universities is based on subcontracts (not grants). Full details of the proposal process are summarized in Section 3.

LANL postdoc support.
IGPP solicits proposals from Los Alamos National Laboratory programmatic postdoctoral researchers and/or their mentors to conduct postdoctoral research on an independent, revolutionary scientific idea that has Los Alamos National Laboratory mission relevance. The proposed work must not be related to the programmatic research already providing support to the postdoc, and the budget request cannot exceed 50% of the postdoc's total salary for the fiscal year. Proposals will be for one year only, though renewal proposals for an additional year may be considered. Postdocs entering their first, second, or third year will be considered for support. Proposals must be submitted by a Los Alamos National Laboratory PI, and it is expected that the named postdoc provides significant contributions to the writing of the proposal. There is no requirement for University collaboration. We anticipate that up to 10 programmatic postdocs may be supported with half- time research using IGPP funds in FY13. Full details of the proposal process is summarized in Section 3, PROPOSAL PROCESS.

Feasibility analyses of emerging scientific ideas.
IGPP solicits proposals for one year studies that explore the technical feasibility of a new scientific concept that has the potential for further development into a Los Alamos National Laboratory LDRD proposal, IGPP project proposal, IGPP special large project (see below), or external support. Scientific feasibility analyses are reserved for revolutionary scientific ideas that are mission relevant, at their early stage of development, and involve a multi-disciplinary approach. Funds are restricted to the Los Alamos National Laboratory Technical Staff Members, TSMs and/or Los Alamos National Laboratory postdocs and students, for one year only. Requests may not exceed $50K, and funds may be used for Los Alamos National Laboratory salary, small equipment purchases, publication costs, and collaborative visits. We anticipate that up to 10 feasibility studies may be supported in FY13. Full details of the proposal process are summarized in Section 4.

Special large project competition.
In addition to the above projects, IGPP solicits proposals for a single project on a subject within the IGPP scientific disciplines, for up to $100K per year for particularly innovative and revolutionary research. Large projects must satisfy some combination of the following:

1. The specific topic requires a concentration of effort in order to rapidly advance the concepts due to some level of scientific or institutional urgency;
2. An opportunity is otherwise lost due to available facilities, equipment, or field programs; and/or
3. The project cost is more advantageous if concentrated during a given period of performance.

Examples of projects that fall into this category are distributed (thinking) sensor network design and applications to geo-, space-, and astrophysical sciences; contributing to the challenge of energy independence; providing new tools for climate prediction, monitoring, and mitigation; adding new capabilities to space

situational awareness; advancing predictability and/or mitigation of extreme phenomenology. The project may be supported for up to three years (in two phases as described in **Change In Proposal/Project Structure**), assuming adequate yearly progress and availability of IGPP funding). Interested PI's are asked to contact the IGPP director for clarification before proposing, insofar that the proposal process may follow the guidance in Section 3, depending on the scope and affiliations of PI's.

PROPOSAL SUBMITTAL INSTRUCTIONS AND DEADLINE
Proposals (title, abstract page, main body including budget) must be submitted by email, to be received by IGPP no later than **April 6, 2012**.
Send to: Georgia Sanchez (georgia@lanl.gov) with copies to: Harald O. Dogliani (dogliani@lanl.gov) and the appropriate discipline leader:
Astrophysics and Cosmology: Edward Fenimore; efenimore@lanl.gov Space physics: Edward Fenimore; efenimore@lanl.gov Solid earth geosciences: Scott Baldridge; sbaldridge@lanl.gov Climate system and impacts: Manvendra Dubey dubey@lanl.gov
A confirmation of receipt will be sent by email to the Principal Investigator of each proposal submitted.

2. SCIENTIFIC DISCIPLINES INCLUDED IN THIS CALL

IGPP has four subject research areas, included in this call for proposals:

- Astrophysics and Cosmology (IGPP discipline leader: Edward Fenimore; efenimore@lanl.gov)
- Space Physics (IGPP discipline leader: Edward Fenimore; efenimore@lanl.gov)
- Solid Earth Geosciences (IGPP discipline leader: Scott Baldridge; sbaldridge@lanl.gov)
- Climate System and Impacts (IGPP discipline leader: Manvendra Dubey; dubey@lanl.gov)

Each of these subject areas is directed by a discipline leader (identified in parentheses) who is responsible for coordinating research efforts so that individual projects will benefit from the best available Los Alamos National Laboratory resources and expertise. Prospective project leaders are encouraged to contact the respective discipline leaders for information on technical scope of the IGPP disciplines and/or visit the IGPP website http://www.igpp.lanl.gov/ for additional.

IGPP has identified the following scope and priorities, as guidance for proposal preparation with start dates in FY12.

Astrophysics
Proposals are solicited with emphasis on theoretical research, observational research, and instrumentation research. General interests are multidisciplinary projects at the boundaries between astrophysics and nuclear physics, particle physics, condensed matter physics, plasma physics, and/or general relativity. Use of facilities where the Los Alamos National Laboratory is a participating institution is highly desirable, e.g., the Milagro

gamma-ray observatory, Very Long Baseline Array, Sloan Digital Sky Survey, National Solar Observatory, etc.)

The following specific topics are of interest:

1. Gamma ray astrophysics,
2. Space instrumentation,
3. Stellar dynamics, in particular neutron star physics and radio pulsars
4. Cosmic ray, and the cosmic microwave background
5. Solar neutrinos,
6. Primordial black holes,
7. Intergalactic magnetic fields,
8. Active galactic nuclei,
9. Supernovae,
10. Energetics of supermassive black holes,
11. Physics of accretion disks,
12. Dynamics of the interactions between superfluids and normal matter, and
13. Exoplanets.

Space Physics

Proposals are solicited that advance theoretical, computational, and/or observational research into the plasma environment of the Earth's atmosphere and into processes that affect this environment. Research on the transport of plasma and energy from the Sun through interplanetary space to the Earth is also encouraged. These include the interaction of various plasma populations and the coupling of microscopic and macroscopic phenomena.

The following topics are of interest:

1. Solar dynamics responsible for the solar wind,
2. Magnetohydrodynamics of the magnetosphere, ionosphere, and thermosphere,
3. Magnetospheric substorms,
4. Magnetotail current sheet dynamics,
5. Dusty plasmas,
6. Magnetospheric models (near-Earth plasma sheet through into the inner magnetosphere) and the use of Los Alamos National Laboratory data for either boundary conditions, assimilation or validation,
7. Physics affecting the performance and reliability of space-borne and ground-based technological systems,
8. Statistics and predictability of magnetospheric substorms,
9. Physics governing satellite to ground communications,
10. Solar wind interaction with planetary magnetosphere such as Jupiter or Saturn,
11. Modeling of planetary physical evolution, including hydrology, and
12. Remote sensing of planetary geology and climate by planetary orbiters.

Leveraging against Los Alamos National Laboratory facilities and databases, e.g., linkage to multi-cluster satellite experiments or computer simulation codes, is strongly encouraged.

Solid Earth Geoscience

This focus area supports a breadth of basic research concerning planetary surfaces and interiors, including numerical, experimental, and field studies of the structure, properties, processes, and dynamics of terrestrial planets. It is strongly recommended that proposals exploit unique Los Alamos National Laboratory resources (e.g., Los Alamos National Laboratory high-performance computing resources; the Los Alamos Neutron Science Center (LANSCE); geochemical analyses facilities resident in EES and C divisions; and/or sensor technology capabilities resident in C, EES, ISR, and N divisions).
We are particularly interested in innovative and collaborative research projects in areas of current, strong international scientific interest such as the following:

1. New techniques in passive (imaging) or active (e.g., lidar, radar) remote sensing and digital data analysis for the geosciences,
2. Elastic strain measured by GPS or InSAR for applications in natural hazards and hydrology,
3. Strain localization in geomaterials,
4. Earthquake seismology and seismotectonics, including rupture processes, rheology and friction of fault zones, and earthquake clustering,
5. Dynamics and elasticity of Earth materials,
6. Transient and steady-state behavior in geologic and hydrologic processes, including multi-phase fluid flow in porous and fractured media,
7. Exploiting low-temperature thermal evolution of geomaterials or effects of ionizing radiation on geomaterials,
8. Dynamic interactions between climate, tectonics, and surface processes, including mechanics of erosion, biogeochemistry of permafrost thaw, and ecological feedbacks to climate change on all time and space scales, and
9. Ice-field fracturing and the role ice fracturing plays in ice-field melt.

The following areas reflect continuing IGPP interest:

1. Planetary interiors,
2. Planetary tectonics,
3. Earth's interior--composition and state, and rheology of crust, lithosphere, and mantle,
4. Geomagnetism and electromagnetics,
5. Dynamics of lithosphere and mantle,
6. Tomography, and
7. Heat generation and transport.

Complex Dynamical Climate and Environmental Systems

This focus area emphasizes the nonlinear dynamics and multi-equilibria of the coupled atmosphere, (liquid and ice covered) ocean, hydrosphere, and biosphere of planet Earth, on scales ranging from urban canopies to basin and global extent. General interests are studies that extend our understanding of the causes of:

1. Temporal variations of ocean and atmospheric basin scale oscillations,
2. Rapid climate change on both global and regional scales, and
3. The physics and chemistry governing storms, hydrology, geomorphic processes, and land use within a region experiencing climate change.

Use of Los Alamos National Laboratory facilities and data bases (e.g., use of LANL's ecological research stations; GIS facilities; data bases of the COSIM and/or ARM programs; systems modeling of climate change, economic impact, and optimum use of economic and financial instruments; and/or exploitation of new sensor technologies) as part of revolutionary scientific concepts are strongly encouraged. Specific topics of interest include the following:

Prospective PI's should note that proposals involved with the design of distributed sensors may be found in all subject research areas. Similarly, climate related proposals may be found in space physics, geophysics, as well as climate systems and impacts; and plasma physics may easily fit into astrophysics and space physics. PI's should recognize that IGPP strongly encourages a multi-disciplinary approach in proposed work; and there is no bias against proposals that do not adequately fit into only one of the four subject areas.

3. PROPOSAL PROCESS

PROPOSAL SUBMITTAL INSTRUCTIONS AND DEADLINE

Proposals (title, abstract page, main body including budget) must be submitted by email from the email account of either the Los Alamos National Laboratory or University PI, to be received by IGPP no later than **April 6, 2012.**

Send to: Georgia Sanchez (georgia@lanl.gov) with copy to: Harald Dogliani (dogliani@lanl.gov).

UNIVERSITY-LABORATORY COLLABORATIVE RESEARCH PROPOSALS AND LABORATORY POSTDOC PROPOSALS

FUNDING INTERVAL AND IN-KIND CONTRIBUTIONS FOR PROJECTS INVOLVING UNIVERSITY/LABORATORY COLLABORATIVE RESEARCH

The next funding interval is October 1, 2012, through September 30, 2013. Principal Investigators should note, that the availability of funds is contingent upon the date the subcontract is awarded by the Los Alamos National Laboratory Contracts Office, which may take up to several months after the start of the fiscal year for new proposals. For all projects supported with Los Alamos National Laboratory financial resources, it is imperative (with no exceptions) that the LANL-originated funds issued in FY13 be spent by COB September 30, 2012. (Note that Universities may submit invoices after Sept 30, 2012, for work conducted prior to Sept 30, if allowed under the Los Alamos National Laboratory subcontract that supports the University research.) That is, funds allocated in one Federal fiscal year can **NOT** be rolled over into following fiscal years!

Universities are encouraged to provide in-kind support, e.g., by waiving overhead,

Change In Proposal/Project Structure

In contrast to previous years any new IGPP three-year proposals submitted for initial work beginning in 2013 must be structured in two phases. The first phase covers the first two years of research. The second phase covers the final third year. No proposal will be funded for more than three years by IGPP. The two-phase structure is a result of the need to comply with restrictions imposed by DOE/NNSA and Los Alamos National Laboratory rules governing the use of the specific types of funds that IGPP Los Alamos uses. Specifically, Phase 1 can **NOT** extend beyond 30 September 2015 and Phase 2 does not begin before 1 October 2015. The Phase ½ "DMZ" is the federal fiscal year boundary between 2014 and 2015, 1 October 2014.

Phases 1 and 2 must result in distinctly different deliverables. Phase 2 may not simply be an extension in-kind of the work performed in Phase 1. For example, if Phase 1 research uses a specific database for analysis, Phase 2 cannot simply expand the database for the same type of analysis. Phase 1 could deliver a new type of sensor while Phase 2 might deploy or test the performance of the sensor, comparing its performance with other sensor systems. Or, Phase 2 could consist of fielding the sensor for collection of data used for further analysis. Phase 1 could consist of the creation of new original computer programs to model certain phenomenology and Phase 2 could involve detailed comparison of its fidelity/performance when compared to real-world data or other computer modeling approaches presumably for the same type of phenomenology codes. Phase 1 may consist of field data collection in one region or area and Phase 2 might consist of deep analysis of the data collected. Or, Phase 2 could consist of field measurements in another region or season

providing leveraged salary support to the University PI, etc. In many cases, proposals may be submitted as multi-year, two-Phased efforts, usually with a maximum of three years. Renewals for following years are determined based on progress during the previous year and timely delivery of progress reports.

FUNDING TO LOS ALAMOS NATIONAL LABORATORY PROGRAMMATIC POSTDOCS

The funding interval may be up to 12 months, with work performed entirely within FY13. Renewal proposals will be required for scientific activity that extends work originating in FY12 (or earlier) into FY13. The Los Alamos National Laboratory Principal Investigator (postdoc mentor) will be required to include in the proposal details on all other funding sources that will be required to cover postdoc salary costs during FY13.

Because Los Alamos National Laboratory LDRD funds are used to support Los Alamos National Laboratory postdocs under this IGPP minigrant program, the Principal Investigator and postdoc will be required to spend the LDRD funds by COB September 30, 2013; there are no possibilities to carryover LDRD-originated funds into a subsequent fiscal year.

GUIDANCE: PREPARATION OF NEW (COLLABORATIVE PROJECTS AND/OR LOS ALAMOS NATIONAL LABORATORY POSTDOC) PROPOSALS

The following format is recommended for all collaborative LANL-University minigrant proposals and Los Alamos National Laboratory postdoc proposals:

Cover Sheet, to include on one page:

1. Title of proposed project,
2. Name of University Campus if the "minigrant" is for University/Laboratory collaborative research,
3. Is this a new proposal or renewal? If you are submitting a proposal for renewal, please indicate if the proposal is for the second year or third year.
4. Which IGPP discipline area(s) is this proposal most relevant to?
    a. Astrophysics
    b. Space physics
    c. Solid Earth Geosciences
    d. Climate Science
5. Proposed start date, and proposed duration of project (usually 1 or 2 years/Phase 1; and 3rd year, Phase 2).
6. Total cost by fiscal year
7. Name, title, address, email address, and phone number for PI(s).
8. Name and email of postdoc and/or graduate student(s), if known.

Main Body (including budget information) Use the following outline in formatting the main body; please limit to **five total pages** of text (for Sections I through VIII), plus figures and a budget page:

I. Title of project, and short abstract
II. Principal investigators and team, including all contact information

University PI (if relevant): address, telephone number, fax, and email address
LANL PI: Group, telephone number, fax and email address
Name and email address of participating postdoc and/or graduate student(s)

III. Start date, and project duration
IV. Objectives
V. Background
   i. History of problem
   ii. Scientific debate
   iii. Hypotheses to test
   iv. Why now?

Approach

I. Theoretical, numerical, or experimental activity
II. Methods used (describe comprehensively) History of problem, Scientific debate, Hypotheses to test, Why now?
III. Any relevant leveraging or necessary coordination, e.g., other projects or facilities
IV. Resources to be used in the project such as resources at Los Alamos National Laboratory, at the University, if relevant and other Resources
V. Statement of Work
   i. Tasks to be performed
   ii. Milestones
   iii. Deliverables
   iv. For collaborative proposals: schedule of visits (and work performed) at Los Alamos National Laboratory or Campus
   v. For Los Alamos National Laboratory postdoc proposals: schedule of any visits to other institutions, in particular for work to be performed outside of the Laboratory

VI. References
VII. Proposing Team
   i. Role of University Principal Investigator (if relevant)
   ii. Role of Los Alamos National Laboratory PI, including efforts at mentoring
   iii. Role of postdoc or graduate student
      a. Identify if MSc or PhD project, if grad student
   iv. Other participants
VIII. Significance and timeliness
   i. What is the significance of the project? One way of getting at this is to answer the question, "When this project is finished and published, who will use the results?" This question should be dealt with explicitly, with significant input from the Los Alamos National Laboratory PI.
   ii. Why should this project be funded now instead of, e.g., next year?
IX. Budget summary (1 page max)
   i. Indicate separately those amounts to be spent on campus(es) and at LANL:
      a. Salaries. Details of computations to be provided.
      b. Supplies
      c. Computer usage and related costs

d. Travel
e. Equipment
f. Other expenses
g. TOTALS by fiscal year and cumulative for multiyear projects: for University (if relevant); and for LANL

ii. Supplemental budget information (including a section on current and pending support for research from other sources)

X. Biographical sketches of PIs including already identified postdocs and/or graduate students, ~1 page each.

While IGPP supports publication page charges, such charges are NOT to be included in the proposed budget. PI's are asked to send an email to the IGPP director at which time funding is needed to cover page charges for publications associated with IGPP research.

GUIDANCE: PREPARATION OF RENEWAL (UNIVERSITY COLLABORATIVE PROJECTS AND/OR Los Alamos National Laboratory POSTDOC) PROPOSALS

Proposals submitted for renewal must contain the following information:

1. Cover Sheet, to include the same information as for a new proposal
2. Copy of original proposal

Progress report

If this is a first time renewal (after less than one year of research), only a brief statement of progress during the first year of work is required (1 page maximum); see below.

If this is a second time renewal (covering more that one year's work), a progress report of about 5 pages is required; see below.

The revised work plan/proposal for FY13 must include:

1. Updated declaration of other ongoing research projects related to the IGPP funded project
2. Detailed budget request, noting any changes from the original proposal.
3. The statement of progress for first time renewal proposals (year 1 to year 2) should include
    a. Summary of activity that took place during FY11
    b. Scientific activity
    c. Presentations and publications (with complete citation)
    d. Visits and exchanges of personnel between the University and LANL
    e. etc.

For renewal proposals that go into the third year of work, the formal progress report must be formatted as follows (approx. 5 pages total):

I. Project objectives and brief summary of work plan (maximum half page)
II. Summary of research results to-date (1-3 pages), plus any relevant graphics
III. Any new insights or challenges in meeting project objectives or any complications in meeting project objectives

IV. List of publications, including submissions
V. List of presentations
VI. Name of graduate student(s) and/or postdoc(s)
    a. Progress towards PhD or MSc, if graduate students are involved
VII. Documentation of visits to Los Alamos National Laboratory and/or to University, or other facilities/sites
VIII. LANL and/or other facilities used in the research
IX. Budget details
X. Efforts to secure further funding from other agency

PROCESS OF REVIEWING, SELECTING OR REJECTING PROPOSALS

All new proposals undergo peer review by scientists in the broad research community who are familiar with the research topic. Reviewers are given a set of questions to address, i.e., concerning scientific merit, risks in reaching objectives, depth of multi-institutional collaborations, growth potential of research topic, quality of participants, and budget. With only unusual exceptions, renewal proposals are reviewed by the IGPP Director and discipline leaders, and input may also be solicited from relevant members of IGPP's Advisory Committee. (IGPP's advisory committee is comprised of subject matter experts from both Los Alamos National Laboratory and academia). Renewal proposals going into their second year of work are generally approved, i.e., unless there are indications from the Los Alamos National Laboratory Principal Investigator or Discipline Leader that collaborations are ineffective. Renewal proposals going into the third year are evaluated not only based on the written renewal proposal but also on an oral presentation by the Los Alamos National Laboratory Principal Investigator to the IGPP management team (to be conducted in May 2011). Effective contributions by the University Principal Investigator / Los Alamos National Laboratory postdoc to these presentations will greatly enhance the likelihood of renewal.

Final decisions on acceptance and/or denial of all proposals will be reached after the annual meeting of IGPP's Advisory Committee, typically in June/July of each year. Formal announcements of acceptance and denial of proposals will be made by late summer 2010.

In preparing proposals, PIs should be aware of the following reasons why some proposals are rejected:

1. Objectives and background are unclear or inadequately argued.
2. Ideas are not innovative.
3. Methods are inadequately described or do not reflect state-of-the-art.
4. Approach is not convincing enough to satisfy the objectives.
5. For research proposals involving University-LANL collaborations, collaborations are weak.
6. Important and relevant Los Alamos National Laboratory facilities are not considered or exploited.
7. No graduate student or postdoc is involved in the research.
8. Lack of commitment by the Los Alamos National Laboratory Principal Investigator

to the research or mentoring process.

9. Subject matter is not relevant to IGPP's scientific interests or research priorities.

FINAL REPORT AFTER COMPLETION OF UNIVERSITY COLLABORATIVE PROJECT OR POSTDOC PROJECT

At the completion of each project, whether it be one, two, or three years duration, a final report must be submitted. Projects that are completed at the end of FY13 must submit their final report by close of business, October 15, 2012. The format for the final report is:

I. Project objectives and brief summary of work plan (maximum half page)
II. Summary of research results to-date (1-3 pages), plus any relevant graphics
III. Any new insights or challenges in meeting project objectives
IV. List of submitted and already published manuscripts with citations, including a very brief (max one paragraph) description of the key results of each publication.
V. List of presentations
VI. List of patents and awards
VII. Name of participating graduate student(s) and/or postdoc(s)
    a. Progress towards PhD or MSc, if graduate students are involved
VIII. Documentation of visits to Los Alamos National Laboratory and/or to University, or other facilities/sites
IX. Discoveries that have led to new research challenges, based on the research
X. Efforts or prospects to secure further funding from other agencies.

SCIENTIFIC FEASIBILITY STUDIES

FUNDING INTERVAL

The funding interval is October 1, 2012, through September 30, 2013. For all projects, it is imperative (with no exceptions) that the funds be spent by COB September 30, 2013.

USES OF FUNDING

Funding may be used to support the salaries of Los Alamos National Laboratory technical staff, Los Alamos National Laboratory programmatic postdocs, and/or Los Alamos National Laboratory hired graduate students. Funds may also be applied to small equipment purchases and travel costs associated with the proposed work. The funding request may not exceed $50K.

GUIDANCE: PREPARATION OF PROPOSALS

The following format is recommended for all scientific feasibility proposals:

Cover Sheet (1 page)

I. Title of proposed project
II. Proposing PI, including contact information
III. Which IGPP disciplines is this proposal most relevant to?
    a. Astrophysics
    b. Space Physics
    c. Solid Earth Geosciences
    d. Climate System and Impacts

IV. Proposed start date
V. Proposed duration of project
VI. Budget request
    a. Total by year and institution

Main Body (including budget information)
Use the following outline in formatting the main body; please limit to **five total pages** of text, plus figures and a budget page:

I. Title of project, with short abstract
II. Principal Investigator s and team, including all contact information
III. LANL PI:
    i. Group
    ii. Telephone number
    iii. Fax
    iv. Email address
    v. If relevant, name and email address of participating postdoc and/or graduate student(s) and /or other participants, external to the Laboratory
IV. Start date
V. Project duration
VI. Objectives
VII. Background
VIII. History and significance of problem and urgency of finding a solution to the problem - New scientific idea or concept being proposed for feasibility study - What's revolutionary about the scientific idea or concept?
IX. Approach - Theoretical, numerical, or experimental activity -Methods to be used (describe comprehensively) - Any relevant leveraging or necessary coordination, e.g., other projects or facilities
X. Facilities and Resources to be used in the project
    i. Facilities and Resources at Los Alamos National Laboratory
    ii. Facilities and Resources at other research institutions or universities
XI. Statement of Work
    i. Tasks to be performed
    ii. Milestones - Deliverables
XII. Schedule of any visits to other institutions, in particular for work to be performed outside of the Laboratory
XIII. References
XIV. Budget summary Totals by fiscal year and institution
    i. Salaries
    ii. Equipment and supplies
    iii. Travel
    iv. Etc.

While IGPP supports publication page charges, such charges are NOT to be included in the proposed budget. PI's are asked to send an email request to the IGPP director at for funding to cover page charges for publications associated with IGPP research.

FINAL REPORT AFTER COMPLETION OF FEASIBILITY STUDIES

At the completion of the scientific feasibility project, a final report must be submitted. For example, projects that are completed at the end of FY12 must submit their final report by close of business, October 15, 2013. The format for the final report must be:

I. Project objectives and a brief summary of work plan (maximum half page)
II. Summary of research results to-date (1-3 pages), plus any relevant graphics
III. Any new insights or challenges in meeting project objectives
IV. List of submitted and already published manuscripts with citations), including a very brief (one paragraph maximum) description of the key results of each publication.
V. List of presentations
VI. List of patents and awards
VII. Name of graduate student and/or postdoc
VIII. Documentation of visits to Los Alamos National Laboratory and/or to University, or other facilities/sites
IX. Discoveries that have led to new research challenges, based on the research
X. Efforts to secure further funding from Los Alamos National Laboratory or other agencies.

• PROCESS OF REVIEWING, SELECTING AND REJECTING PROPOSALS

All projects that conduct scientific feasibility analyses of new concepts will undergo peer review by scientists in the broad research community who are familiar with the research topic. Reviewers are given a set of questions to address, i.e., concerning scientific merit, risks in reaching objectives, revolutionary versus evolutionary nature of the idea being proposed, importance of the topic to Los Alamos National Laboratory mission, growth potential of research topic, quality of participants, and budget.

Formal announcements of acceptance / denial of proposals will be made no later than August 1, 2012.

In preparing proposals, PIs should be aware of the following reasons why some proposals are rejected:

1. Scientific problems not relevant to Los Alamos National Laboratory mission
2. The sense of urgency is inadequately defended
3. Approach does not convincingly satisfy the objectives
4. Methods are inadequately described or do not reflect state-of-the-art
5. Scientific idea is neither revolutionary nor compelling
6. Important and relevant Los Alamos National Laboratory facilities are not considered or exploited
7. Subject matter is not relevant to IGPP's scientific interests or research priorities.

4. MISCELLANEOUS

REQUIREMENT FOR SIGNATURE PAGES

Signature pages are not required at the time proposals are submitted. IGPP will request signatures from co-PI's, and their respective institutional officials, only if IGPP recommends the proposal for funding. Before initiation of a PR (LANL procurement request) to support the university project, signatures will be required from the University

Department Chair or Director of campus-organized research unit, Management Service Officer or Fiscal/Budget Person, and Contract and Grants Officer. For LANL, the Proposing Laboratory PIs must receive approvals from their respective Group Leaders.

SECURITY CONSIDERATIONS

Classified work is not supported under the IGPP collaborative University-Laboratory "minigrant" program. Therefore, all research facilities (including computing) conducted under IGPP funding involving Universities will be carried out in unclassified space.

POLICY REGARDING PREJUDICE AND BIAS

While "minigrant" applications must originate from US institutions, there is no prejudice based on race, gender, or nationality, for PI's, postdocs, and students.

FOR FURTHER INFORMATION:

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